Appl. No. 10/022,053 Amdt. dated October 22, 2003 Reply to Office action of June 25, 2003 Amendments to the Specification:

Please replace the title with the following amended title:

<u>METHOD AND APPARATUS FOR MANUFACTURING PARTIALLY DIFFUSING</u> OPTICAL FIBERS

Please replace the paragraph beginning at page 12, line 23, with the following rewritten paragraph:

-- Another preferred embodiment of the present invention incorporates one or more lasers to fabricate partially diffusing illuminating fibers. By strong focusing of the laser beam and working with short pulse, high-energy systems it is possible to generate defects inside the bulk of a transparent fiber. Fig.3 shows the inclusion of a laser manipulation source into the manufacturing process. Since a laser beam can be coupled through quartz windows, the setup is of less complexity than the inclusion of an ion implantation facility into fiber tube 304. It is even possible to work without tube evacuation. As in figure 2, a preform is heated in oven 302 and fiber 306 is drawn through clean tube 304. Laser beam 308 originates from laser source 300 and is suitably shaped by optical system 310 in order to obtain previously described focal point 104, which is illustrated in Fig. 1. From interaction zone 312, beam 308 is guided into beam dump 314. As before, heating elements 316 may be included in the process to condition the fiber for enhancement.--

Please replace the paragraph beginning at page 13, line 8, with the following rewritten paragraph:

-- In a most preferred embodiment, several fiber enhancement devices are brought in-line to produce a continuous length of partially diffusing optical fiber. Fig.4 illustrates the general setup of a preferred apparatus for producing partially diffusing optical fibers. The starting point is oven 402 from which a zone of molten preform is drawn via drawing means 410 to produce optical fiber 406 through clean tube 404 that protects fiber 406 from pollution. Tube 404 maybe evacuated to allow the various process steps for the fiber manufacturing. Heating elements 408 can be used to change fiber 406 diameter for each unit length element. Heating elements 408

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further serve to prepare the fiber for enhancement by ion-implanter 420 or laser 422. The details of these processes have been described in previous preferred embodiments. Vapor unit 414 serves to generate a second cladding if desired, or may be used to otherwise chemically treat fiber 406. This second cladding can fulfill scattering operations or contribute to higher fiber performance in general. Earlier described processes for fiber enhancement may also be included or repeated after the vapor-coating step. Drawing means 410, ion-implanter 420, laser 422, vapor unit 414, and any other enhancement device may be optionally connected to a controller such as computer 412 to control draw speed and control the enhancement means to create desired patterns along the fiber. Finally, fiber 406 is provided with a polymer coating by coating means 416. The polymer must be appropriately chosen in order to withstand the scattered radiation and to enhance the fiber flexibility. Polymer-coated partially diffusing fiber 418 of commercial lengths can then be prepared for end use.—